

The Agriculture Industry in California and the Need for Agriculture Education

A Senior Project
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Bachelor of Agriculture Science

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Abstract

The purpose of this project was to develop a promotional film about agricultural literacy. It was created to promote agriculture education to elementary and middle schools. In order to capture a wide array of opinions the project includes interviews of teachers, school administrators and parents to diversify the support of incorporating agriculture into the classroom. Working with fourth grade students allowed the project to showcase students enjoying agriculture based lessons that incorporated multiple learning styles. The video that was created can be used to highlight student engagement in topics about agriculture. It also shows a variety of support which can be used to help incorporate agriculture into the classroom at any school.

Chapter One

Introduction

In California today, many individuals do not have an understanding of where their food comes from. The world's demographics are rapidly shifting from rural to urban, by the year 2050 it is expected that 68% of the world's population will be urban (South Carolina Farm Bureau, 2012). With this shift, along with the world's population continuing to grow, something must be done to improve agriculture literacy. Implementing a program that educates young students about the agriculture industry, may help to bridge this gap. Not only will this help to educate the youth, they will also have an opportunity for classroom lessons that focus on differentiated instruction. Students often enjoy guest lecturers and activities that get them involved. Individual school districts should consider incorporating agriculture into the classroom curriculum. This would allow students the opportunity to learn about science through hands-on agriculture experience.

Statement of the Problem

There is a need for agriculture literacy to be implemented into the classroom setting in elementary and middle schools. As urban sprawl continues and more agriculture land is being depleted and used for housing, businesses and other complexes, the normalcy of seeing farmland and ranches is disappearing. The more that people are removed from agriculture and knowing where their food comes from, the greater the need for education about it. The shifting demographic of the United States has caused an increase in the need for agriculture education to preserve agriculture literacy.

The Importance of the Project

California agriculture is a leading industry in our state and country, by implementing agriculture into the classroom, students will learn and understand its value. Students who grow up with this knowledge will know where their food comes from and the importance of its roots. This can be accomplished by working with an agriculture teacher or resources such as Agriculture in the Classroom. This will give students and teachers the opportunity to interact with a teacher who is knowledgeable about agriculture, ask questions, and apply education curriculum standards to a new exciting way of learning. Students who are introduced to agriculture at a young age will be able to understand where food comes from and will develop a natural desire to support the industry.

Purpose of the Project

The purpose of this project is to develop a promotional video for school districts that demonstrates the need for agriculture education in elementary and middle schools to help bridge the gap between agriculturists and consumers. This will encourage teachers to use programs such as Ag in the Classroom and more hands-on science experiments.

Objectives of the Project

To accomplish the purpose of this project:

1. To increase the awareness of the need for agriculture education in elementary and middle school grades.
2. To examine the responsiveness of school districts to see the benefits of agriculture education and the potential to diversify education.

Definition of Important Terms

Listed below is a review of important terms that have been, or will be, used throughout this project:

- 4-H: “4-H is the nation’s largest youth development organization. More than 6 million 4-H youth in urban neighborhoods, suburban schoolyards and rural farming communities stand out among their peers: building revolutionary opportunities and implementing community-wide change at an early age” (About 4-H).
- Agricultural Literacy: describes programs that promote the understanding and knowledge about agriculture. This can be students, consumers, and the public.
- Agriculture in the Classroom: Agriculture in the Classroom programs are implemented by state operated programs. USDA Agriculture in the Classroom supports state programs by providing a network that seeks to improve agricultural literacy — awareness, knowledge, and appreciation — among PreK-12 teachers and their students.
- National FFA Organization: A youth agricultural education organization that helps its members to develop their own unique talents and explore their interests in a broad range of career pathways.
- School District: “Most people see school districts as stable or even permanent governmental entities. School district boundaries, however, do change. Territory is transferred from one school district to another, districts are divided or combined with their neighbors, and some districts are terminated. The District Organization Handbook describes how these changes come about and provides reference for procedures and responsibilities for all parties involved in the school district organization process” (California Department of Education, 2011).

Summary

Through the development of an informative video that can be distributed across California to school districts, parents, and industry professionals they will be able to clearly see the need and benefits of agriculture education. If agriculture is implemented into the elementary and middle school classrooms, students will have a more dynamic learning environment. Students will be given opportunities to learn by doing as well as applying science into real world applications. Educating students at a young age about the importance of the agriculture industry will help to improve agriculture awareness. Students will share their experiences from the classroom with their parents. As the demographic shifts from rural to urban, there is a growing need for basic understanding of where our food comes from. Students will be able to deliver this message to his or her parents by sharing their everyday classroom experiences. Incorporating programs into the curriculum such as Agriculture in the Classroom has potential due to its clear organization and practical approach. This truly will be a great addition to any school district for teachers, students and industry alike.

Chapter 2

Review of Literature

The Agriculture Industry in California and the Need for Ag Education

As the demographic in California shifts, the public needs to understand the impact and role that agriculture plays in our lives. Agriculture is a huge industry in California. About 73% of the state's agricultural income comes from crops and the remaining coming from livestock products. California alone produces more than half of the nation's fruits, nuts and vegetables. (Growing California's Agriculture, 2004) Agriculture is responsible for over a million jobs in the state. Not only does California grow 350 commodities, but it grows 99% of the nations, almonds, artichokes, brussel sprouts, dates, dried plums, figs, kiwi, nectarines, olives, pistachios and walnuts. It also leads the nation in production of avocados, grapes, lemons, melons, peaches, plums and strawberries.

With California's agriculture industry producing the most commodities in the United States, it is disappointing how large of a disconnect there is between the rest of the population and the agriculture industry. The public's misconceptions about agriculture are a huge growing problem. Whether it is thinking that chocolate milk comes from brown cows or that organic crops have added health benefits, an understanding for the agriculture industry needs to be developed. People are learning these misconceptions everywhere: television, children's books, the internet, and other media sources. In policy, bad decisions are often made that affect agriculture production negatively. These are made because of the lack of understanding of agriculture throughout the general population. With the world's population rapidly growing,

agriculture will have to start constantly producing more and more food. With the majority of the population uneducated on the process of producing food, they are creating problems that are blocking the industry from doing its job. It is very important that the industry tries to educate the public on agriculture, its role in their everyday lives and what it must do to produce the amount of food to feed the whole world.

The world's demographics are quickly shifting. In 1950, 82 percent of the world's population was rural, by the year 2050 it will shift to 68% urban (South Carolina Farm Bureau, 2012). The urban population often takes food for granted. They simply go to the grocery store and whatever they need is there. When something negative is said about agriculture it is almost always automatically believed. Making someone believe that that same statement is false is a challenging task. Once something is said enough in the media, whether it is true or not, people often believe it as fact.

The media constantly tells us that things are "naturally raised" or organically grown and it is implied that these are healthier options for us. There are many "natural" things that can be harmful to us. There are many naturally occurring toxins, nicotine, opium, heroin, morphine, and cocaine all come from plant sources and are considered natural (Texas Farm Bureau, 2011). Organically grown crops do in fact use pesticides, just ones that are labeled natural. These chemicals often have to be sprayed more often than normal to work as effectively as pesticides that are used on non-organic crops.

One very common misconception in the industry is that brown eggs are healthier than white eggs. There is absolutely no difference between the two. It would be extremely hard to convince someone that it is simply that different breeds lay different colored eggs. (South

Carolina Farm Bureau, 2012). Once people get these ideas in their head it is almost impossible to convince them otherwise.

The media is constantly pushing the term “factory farming” and how it is taking over the agricultural industry. When in reality 90% of the farms in the United States are family owned. Non-family owned corporate farms produce less than 7 percent of the U.S. food supply (Ag 101 Demographics, 2009).

If agriculture is going to produce the amount of food needed for the ever growing population, it is going to need to be innovative, test out new procedures, and not continue to have restrictions put on it. To do this we will need an educated public that understands what it is agriculture is trying to accomplish. A public that wants to understand the industry and makes decisions based on fact, not rumors or hear say.

Current Ag Programs

As the demographics of California continue to change, agriculture industry members are working together to find creative ways to promote agriculture literacy. Programs such as 4-H, Agriculture in the Classroom, and middle school FFA programs allow students to be introduced to agriculture at a young age. The industry is introduced in a broad spectrum of fields. The curriculum focuses on not only agriculture, but technical and personal development skills. Students are given the opportunity to learn in creative ways through hands-on experimentation. A study done by the University of Florida and the Urban Horticulture Advisor at the University of California Cooperative Extension demonstrates that curriculum can be shaped to be more effective. According to Andersen, “Teachers must become more “constructive” in nature, than “instructive.” This involves teachers encouraging student interaction with their environment”

(Mabie, 1996). The study tested three groups of students, one group based lessons on gardens, in-class short projects such as raising a chicken, and a group of traditional instruction. Following the study, students were more apt to use the scientific method when analyzing and explaining results. The study recommended that students should be introduced to science in an exciting way.

The Agriculture in the Classroom foundation began in 1981 by the United States Department of Agriculture. The goal of the program was to create an accessible venue for teachers to educate youth about agriculture by incorporating agricultural related topics into the standard curriculum. Throughout the years, the program has been successful due to collaboration by teachers, agriculturists, and government leaders. The foundation has separate programs by state that are geared toward each state's leading industries and applicable projects. For instance, the California Foundation for Agriculture in the Classroom, created CROP Circles, California Regions of Optimal Planting, which is a gardening guide for the six regions of California. The planning work has been done prior for a teacher who wants to implement agriculture into the classroom. Lesson plans that correspond to the crops are also available. The lesson plans are created using the California State Board of Education Content Standards for grades one through six. Resources are easily accessible online as well as by mail and at various conferences and events such as Agriculture in the Classroom Conferences and California Agriculture Day at the Capitol. According to the Agriculture in the Classroom foundation, "...in 2009, 91% of teachers agree that their students have developed an appreciation for agriculture as a result of the materials" (Culbertson, 2009). Through conferences to teachers, volunteers, and advocates collaboration, the foundation has been able to reach forty percent of California Schools (Culbertson, 2009).

Other programs that continue to be implemented into the lives of youth relating to agriculture have been established for decades. The 4-H organization began in 1902, and has served as a program that focused on science literacy, healthy living, and citizenship (Mission, Core Values and Framework). The program is open to any student and offers a variety of opportunities to explore the industry through extracurricular activities such as exhibiting animals at fair, sewing projects, cooking classes, speech contests, etcetera.

Agriculture education focuses on developing, “hands-on skills that ensure that the skills learned are practical and usable” (Middle School Programs in Agriculture Education). In some areas, students are able to take agriculture classes in middle school that focus on agriculture awareness, technology, global agriculture, environment, and leadership. The program incorporates FFA into the curriculum and helps to gain student’s interest and appreciation for the agriculture industry. Students get a hands-on approach to learning through laboratory experience where results are seen and not just read, through agriculture based education. These programs are established with the understanding that most students will not enter into the agriculture field. The main goals of these programs are to increase consumer’s awareness and agriculture and environmental literacy.

Learning Styles

With all the distractions students face in school today, it is more important than ever to keep them interested in learning. When children can spend their days watching television, playing video games, or being on the internet why would they want to be doing anything else. Students need to be engaged in what they are learning. Every child has a different learning style. It is important for adults, whether it is parents or teachers, to understand the different learning

styles. There are three types of learning styles; visual, auditory, and kinesthetic. Visual learners need to see things to understand. They need to be exposed to textbooks, videos, graphs, handouts, etc. to get a better understanding of things. Auditory learners learn best through listening. They prefer to listen to a teacher explain things rather than reading it on paper. Kinesthetic learners find using a hands on approach to be the most effective (Smith, 2009).

In classrooms today, lessons are usually taught using both the visual and auditory methods, even though most of the populations of school age children learn best through kinesthetic methods (Smith, 2009). Children learn the most information when they become engaged in the material. This can be done by doing labs, presentations, skits or any other kind of activities. In a study by Wayne State University School of Medicine, it shows that 63% of the students preferred that more than one method was used when teaching. By doing this teachers can be sure that they are meeting the needs of all their students simultaneously (DiCarl, 2006).

In a study done by the Horticulture Department at Louisiana State University, they tested how a weekly hands-on gardening lesson affected science test scores. They gave each of the groups a test prior to any extra teaching where both groups scored almost the same. Then the experimental group was taught 2 hours, once a week, a hands-on gardening lesson, while the control group was given no extra instruction. Then they were given the same posttest. The experimental group scored significantly higher this time. The results show that just a once a week hands-on lesson can greatly improve science test scores (C.D. Klemmer, 2005).

Video Production

There are many reasons that people make videos. Some use them to capture a memory, for entertainment purposes, or as an educational tool. The scale and caliber of the work varies based on the needs of the audience and experience level of the producer. When it comes to creating a valuable work, it is important to select a purpose for the video that you create for a target audience. Developing a purpose for the video will help to narrow down the topic and reach a goal. It is best to use a script to organize the main points of the film. With today's technology, most viewers have a short attention span and need to see a reason to watch or read anything within first glance. "There are key techniques to accomplishing this goal: have a color scheme, font, motion, appropriate soundtrack, a few buzzwords, and know the audience" (Video Marketing Online, 2006). It is essential to target a group of people to be successful because it is necessary to make a connection by being relatable through emotions. Viewers also want to know that the video is credible and they are able to learn something at the end and are willing to take some sort of action. Rick Smith, owner of San Luis Video Publishing, explains that educational films are similar, "Video should be approximately twice a child's age when creating film for educational purposes" (Smith R. , 2011). Students need to be engaged in order to take anything from a film. They need to be prompted with the vocabulary in the film, given a handout to fill out during the film, and have the chance to explore the topic once the film has been presented. Once the message is determined, the quality of the production must be considered and taken into account to be successful.

It is possible to create a high quality film on a budget. The key to perfecting a self-made film is to use a monopod or tripod, camera with an external microphone, ability to add

light, and a good program to edit. With today's technology, there are many inexpensive options that can be used and even free online programs to edit films. Once the proper equipment is obtained, it is important to find optimal settings and compatibility, "optimal software compression schemes for various video types, optimal hard drive configuration, capturing strategies, post-capture processing to improve disk storage requirements and picture quality" (Jensen, 1995). Once the technicalities are set, it is almost time to start filming. Before making a video, it is important to be sure that you have obtained permission and all waivers have been signed. Once this has been completed, filming can begin.

Marketing Agriculture Awareness

Agriculture literacy has slowly become a concern of many individuals involved in the agriculture industry. To influence the changing demographic in California, it is necessary to rely on effective marketing to introduce the public to agriculture. Industry members working in public relations are using social media such as Facebook, Twitter, and blogging to reach a broader audience. Agriculture is also being exposed with a different image with campaigns such as I Love Farmers, where the agriculturist is not the stereotypical cowboy or cowgirl. Marketing needs to be to a target audience. The Agriculture Council of America offers tips to promote Ag Day and other related events by, "organizing contacts, building relationships, adding public relations professionals to the committee, sending press releases and being creative" (Ag Day Publicity Guide, 2011). The article focuses on being effective by utilizing every opportunity to promote agriculture in a positive light. By selecting local celebrities in the area to deliver agriculture related messages, the community gains interest and can relate to the topic. The

messages delivered are concise and use catchy phrases to draw the audience into a subject they typically would not be interested in. The same is true when using photography to its advantage. Using pictures to show the benefits of agricultural life and all those involved enjoying the process of learning about the industry through educational events such as Farm Days, Arbor Day, and Ag Day at the Capitol. Marketing the industry and need for agriculture literacy is key to the future of the industry.

Chapter 3

Materials and Methods

The purpose of this project is to create an awareness of the need for agriculture education in 4th grade. The development of this video will show school administrators, students and parents views about teaching students about agriculture. This will demonstrate supporter's interest to enhance learning and promote agriculture. Students are better able to learn through hands-on experiences that relate to practical applications. Agriculture can be incorporated into the curriculum in many subject areas. Science, for instance, can be utilized in school gardens and laboratory activities. This gives students the opportunity to learn in a variety of ways from classroom textbooks to outdoor planting and harvesting. This video will provide examples and reasons that students, parents and teachers support agriculture. It will also demonstrate the importance of people knowing where their food comes from.

Preparation for Video Production

In order to organize the video plans, the directors selected a target audience and highlighted a school to use. The plans allowed the directors to outline an interview and interactions with teachers, parents, and students during filming. The video was selected to highlight key components that showcase students who are excited to learn in a new environment. The video also can demonstrate the lack of understanding of the agriculture industry that can be addressed at a young age. The video will capture interviews directly related to the logic behind incorporating agriculture into the classroom. The clip can easily be shown to administrators and

school boards as a tool of persuasion that highlights student's excitement and the need to learn about agriculture.

Once the school was selected, it was necessary to receive approval from the principal and teachers. The directors of this project were cleared by the diocese to enter Old Mission Elementary School to work with the students. The students, parents and teachers filled out the Cal Poly Video and Audio Image Release Form (Appendix A) in order to be recorded. Prior to entering the school, a lesson was developed as well as interview questions to capture agriculture in the classroom. Filming assistants were enlisted to help film and edit the video. The footage was made into a short clip that serves as an informational persuasive video. The film crew used a Cannon 7D camera and the Final Cut Pro editing software to create the final video. Editing included combining interviews with footage from the activity with students. The final product is twelve minutes in length.

Outline for Video

The outline for the video will be as follows:

- I. Interviews with Principal Tina Ballantyne, teachers, and parents
 - a. Questions
 - i. Principal Tina Ballantyne
 1. Do you have an interest to incorporate agriculture into the classroom?
 2. Do you think students would enjoy agriculture as a supplement to science?
 3. Do you think it is beneficial to know where our food comes from?

ii. Teachers

1. Are you interested in incorporating agriculture into your classroom?
2. Is it feasible to utilize hands-on learning in your classroom?
3. If given the resources to educate about agriculture would you be willing to adapt your teaching style?

iii. Parents

1. How have you exposed your students to agriculture?
2. Would you like to see agriculture education being taught in the classroom to give more practical hands-on experiences?
3. Why is it important for students to understand where his or her food comes from?

II. Activity with fourth grade students selected from Old Mission Elementary School

a. Activity Lesson Plan

Lesson Title: Top Ten Agriculture Commodities

Identification

Course title: Senior Project

Teaching unit: The need for agriculture education in K-8th grade curriculum

Length (time): Thirty to forty minutes

Specific Instructional Objective:

Students will be exposed to the top ten agriculture commodities in

California. They will be able to ask questions to better understand each commodity's importance. They will complete a handout to demonstrate their understanding of the topic.

Equipment, materials, supplies, books; resources needed for this lesson:

- Chalk board or white board
- Top 10 Agriculture Commodity Poster (Appendix B)
- Top Ten Commodity Worksheet (Appendix C)
- California Department of Food and Agriculture Agricultural Overview:
http://www.nass.usda.gov/Statistics_by_State/California/Publications/California_Ag_Statistics/2010cas-ovw.pdf
- Commodity Examples
 - Milk carton
 - Grapes
 - Almond in almond hull
 - Plant in nursery container
 - Leather
 - Berries
 - Head of lettuce
 - Tomatoes on vine
 - Pistachio
 - Walnut in shell
- Blindfold for game
- Signs numbered 1-10

Academic Language:

- Commodity : an economic good: a product of agriculture or mining
- Agriculture: the science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products : farming

Teaching procedures:

Anticipatory set: Students will be selected as volunteers to participate in a guess that commodity game. Students will be blindfolded and given a commodity. He or she will be asked to guess what the name of the item is that they are holding.

Stated objective(s): Students will be introduced to California's top ten agricultural commodities with hands-on activity. Each student will be able to identify one or more of the top ten agriculture commodities and will complete a worksheet to share with his or her parents.

Purpose: Students will have a better understanding of where his or her food comes from.

Input (presentation):

Subject Matter (outlined)

Teaching Methods

1. Introduction to California Agriculture	1.Explanation 2.Explanation
2. Introduction to activity	3.Explanation

3. Written Directions on Board	4.Guided Practice
4. Top Ten Commodities	5.Guided Practice
5. Student Questions	6.Independent
6. Worksheet on one commodity	Practice and
7. Conclusion/Summary of the	Formative
importance of California	Assessment
agriculture	7.Explanation

Check for understanding:

Students will be given the opportunity to ask questions throughout the lesson. Students may have questions about the directions or topic discussed.

The teacher will ask if there are any questions prior to the Top Ten Commodity Game. The teacher may ask the students to repeat the instructions. For example one student may say, “When I am given the commodity, I will use my senses to guess what I am holding.” After each commodity, the teacher will explain facts about the item. Students will be given an opportunity to ask questions at this point.

Demonstration-Modeling:

Steps Key

Points

1. Introduction to California Agriculture	1.Leadng industry in CA, CA produces more than 350
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<p>2. Introduction to the activity</p> <p>3. Directions to activity</p> <p>4. Commodity Facts</p> <p>5. Student Questions</p> <p>6. Worksheet about a commodity</p> <p>7. Conclusions about the importance of California agriculture</p>	<p>crops, CA grows more than half of the nation's fruits, vegetables, and nuts</p> <p>2. Discover the top 10 commodities</p> <p>3. 10 volunteers will be blindfolded one at a time. They will be given a commodity to feel, smell, etc. They will guess what the product is and will be given hints as well if needed.</p> <p>4. Top Ten Agriculture Commodities:</p> <ol style="list-style-type: none"> 1. Milk and Cream 2. Grapes, All 3. Almonds (shelled) 4. Nursery 5. Cattle & Calves 6. Berries, All Strawberries 7. Lettuce, All 8. Tomatoes, All
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	<p>9. Pistachios</p> <p>10. Walnuts</p> <p>5.Examples may include:</p> <p>Where does chocolate milk come from? What are clothes made out of? How do almonds grow?</p> <p>6.Pass out the worksheet to each student and have each student complete one.</p> <p>Encourage students to raise his or her hand with any questions.</p> <p>7. Explain to students the importance of agriculture in our lives. Give examples of how agriculture can be utilized in the classroom.</p> <p>Ask students if they would like to learn more about agriculture.</p>
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Check for understanding again: Once the students have completed the game, they will be given a worksheet. They will be asked to draw one of the commodities and list one fact about it to share at home. Please see attached worksheet. Students will be asked if they enjoyed the activity.

Guided practice:

1. Milk and Cream :

- a. California has been the nation's leading dairy state since 1993
- b. 1 out of every 5 dairy cows in the United States lives in California
- c. There are more than 1,620 dairies that house 1.75 million cows in California

2. Grapes, All

- a. Grapes are 80 percent water
- b. First introduced to America over 300 years ago

3. Almonds (shelled)

- a. California is the world's largest producer of almonds
- b. 6,000 growers care for about 700,000 acres of almonds

4. Nursery

- a. The California nursery and floral industry is the largest in the United States, accounting for 22.2 percent

5. Cattle & Calves

- a. Cattle have a four compartment stomach
- b. Ground beef is the most popular beef served
- c. Sports that depend on the by-products from cattle are football, baseball, basketball, soccer and volleyball

6. Berries, All Strawberries

- a. Blueberries are a good source of fiber and Vitamin C
- b. Peak harvesting season in California for strawberries is April through June. Up to 10 million pint baskets of strawberries are shipped daily during this time.
- c. California harvests 83% of the strawberries grown in the United States.

7. Lettuce, All

- a. Americans eat about 30 pounds of lettuce a year.
- b. In the United States, lettuce is the second most popular fresh vegetable
- c. Almost all lettuce is packed in the field

8. Tomatoes, All

- a. California produces over 95% of all tomatoes in the United States
- b. This includes tomatoes used to make salsas, ketchup, tomato sauce, etc.
- c. Tomatoes grow on a vine

9. Pistachios

- a. Pistachio shells can be used as drainage chips in pots and containers
- b. The shell opens on its own during the growing process. The nuts are typically sold with the shell on.

10. Walnuts

- a. Walnuts are removed from the tree with a mechanical shaker.
- b. The hull is the outer green covering that protects the shell

Review / Summary: Have each volunteer come back to the front of the classroom to tell the class his or her commodity in the correct order.

Assessment: Formative assessment

Closure: Remind students of agriculture's importance. Restate key facts about California agriculture and its role in student's lives.

Independent practice: Instruct and encourage students to take his or her commodity worksheet home to teach his or her parents and family about the commodity.

ELL / Special Needs: This lesson caters to different disabilities such as visually impaired students. This lesson also incorporates a variety of learning styles.

- III. Summary of ways agriculture will be incorporated at Old Mission Elementary School
 - a. School Garden
 - b. Images of the garden
 - c. Teachers plans to utilize agriculture as a means of enhancing science

Filming

Once the targeted audience and script was developed, the directors gathered the materials needed to film and coordinated with the film crew and school to set up a date to begin filming. Prior to filming, the visual aids were created for the student activity and the classroom was set up with the display. The fourth grade teachers were welcomed to the classroom to see the students interact with agricultural topics. Following the activity, teachers, students, and principal expressed the goals for the school garden.

After the filming was completed, the director and film crew met to edit and finalize the twelve minute informational film. Once the video is completed, two copies were given to Old Mission Elementary School. A copy was also sent to the Teach Ag organization and California Agriculture in the Classroom.

Additional Resources:

Additional resources for the lesson plan can be found in Appendix B and Appendix C. The resources in the appendix are the Top 10 Agriculture Commodity Poster (Appendix B) and Top Commodity Worksheet (Appendix C). These resources assisted in producing this video.

Summary

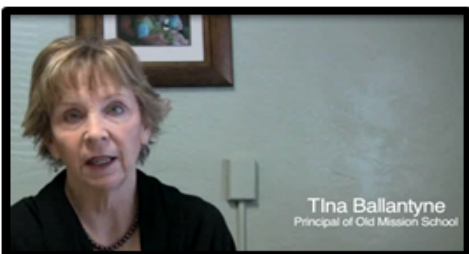
This chapter gives all of the information needed to produce this video. The steps include video preparation, outline for the video, activity plans as well as editing and developing the final product.

Chapter Four

Video Production

Due to the interview style and student interaction of this project, a video was produced to express the key aspects of the need for agriculture education. A lesson plan was utilized for effective interaction with the fourth grade students. Teachers and school administrators were given interview questions prior to the interviews to allow thoughtful preparation. Parents and school faculty signed the Cal Poly Release Form to allow us to film the students and school administrators. Students and faculty who filled out the form were allowed to partake in the lesson that took place at Old Mission Elementary School.

During the editing phase of the video production, key components from the lesson plan, interview and parent surveys were selected. The film highlights student excitement, questions, and feedback from school administrators and parents. A summary of the video script is described below. The following shows still frames from the filming process as well as captions to provide a visual image of the project.



Principal of Old Mission School, Tina Ballantyne.

Tina Ballantyne discusses why she has an interest in integrating agriculture into the classroom.



Sarah Marques and Adie Amador introduce themselves and begin lesson.

Sarah Marques and Adie Amador welcome the class and introduce themselves.

Sarah talks about the purpose of the lesson and gives some California agriculture facts. "Today we are going to expand what you learned about the importance of agriculture. Did you know that over 350 crops are grown in California?"

Sarah asks students what a commodity is, and explains.

Adie gives out directions to game: "We will have 10 volunteers who were chosen by Ms. Higuera to play our guess that commodity game! One student at a time will be blindfolded and asked to use their senses to guess the product in their hand. They will get two tries to guess the commodity without seeing it. When we tell you, remove the blindfold and show the product to the class. We will give you more details about the commodity and answer questions. If you are not the one guessing be sure not to tell your classmate what it is."



Volunteer #1 guesses the product in hand.

Volunteer #1 guesses the correct product in his hand, milk.

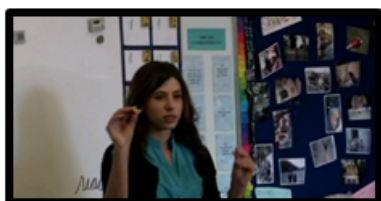
Sarah: "Did you know that approximately one out of every five dairy cows in the U.S. lives in California. (CDFA) and a cow can drink a bathtub full of water every single day."

Volunteer #2 guesses what product is in hand



4th grade teacher Stephanie Higuera

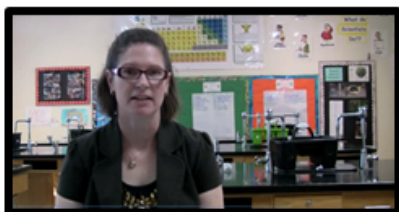
4th grade teacher Stephanie Higuera discusses how she integrates agriculture into her classroom.



Sarah talks about the commodity cattle and calves.

Next volunteer is blindfolded and guesses product in hand.

Sarah talks about the commodity, cattle and calves. “Does anyone know what the most popular type of beef that’s eaten?” Egar student answers, “Pigs!” Sarah then clarifies that beef comes from cattle. Students then guess; tri-tip, steak, and ground beef.



4th grade teacher Stephanie Higuera

Ms. Higuera talks about how students enjoy agriculture lessons because of the different teaching style that is used when teaching agriculture.

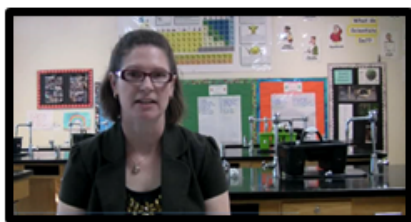
The next volunteer guesses another commodity.

Sarah talks about lettuce being grown and harvested. “Have you guys every seen lettuce growing before, it grows pretty fast. Most of it is actually harvested right in the field and packed and put right into boxes and then sold to you in farmers markets and grocery stores.”



Student guesses product in hand

Student asks question, “How much does it grow around the world, how often?” Sarah answers, “It depends on the season, since Salinas has the perfect weather to grow lettuce it takes 3-4 weeks. So in about a month you can have lettuce growing in your own back yard.”



4th grade teacher Stephanie Higuera

Ms. Higuera discusses the enjoyment students have with hands on lessons. "Their enjoyment helps them understand the material so anytime you can bring in those hands on activities it helps with their engagement."



Adie talks about the different types of tomatoes as Sarah shows examples to the class.

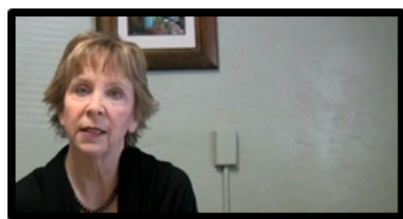
Adie talks about the different kinds of tomatoes. "Tomatoes come in all different shapes and sizes. Has anyone ever seen a cherry tomato, you put them in your salads sometimes? Or we have green tomatoes and one that is orangish-red in color."

Sarah talks about pistachios. "Have you guys had pistachios before? When you open them up there is the shells, these shells you can actually put in your garden, in planters or pots and it will help to drain the water out of the soil so it just doesn't sit there."

Adie asks a question about walnuts. "How many years does a walnut tree produce walnut trees for?"

Students guess 100, 10, and 50.

Adie explains, "They can produce for 45 years and it takes them about 15 years to reach their full production."



Principal of Old Mission School, Tina Ballantyne.

Tina Ballantyne discusses why agriculture enhances students learning. "...because it is important that students can make a connection between the food they eat and the process of how that food got there. I think it is an important learning process to know where food comes from and kids don't have that anymore. They don't have gardens or live on farm land, and often times they don't realize a carrot can be pulled out of the ground and eaten."

**WE ASKED THE PARENTS OF
THESE FOURTH GRADERS
A FEW QUESTIONS ABOUT THE
IMPORTANCE OF AG LITERACY**

Written responses from parent survey

Parent volunteers responded to survey questions:

1. How have you exposed your students to agriculture?
2. Would you like to see agriculture education being taught in the classroom to give more practical hands on experiences?
3. Why is it important for students to understand where his or her food comes from?

Chapter 5

Summary, Conclusions, and Recommendations

Summary

The project has allowed the authors to interact with multiple people involved in the lives of students. The authors have had the opportunity to ask pertinent questions about incorporating agriculture education into the curriculum of elementary and middle schools. During that time a short video was developed that highlights students interacting with agriculture, parent's opinions, and school staffs views about agriculture. This video should be shared with teachers, school districts and advocates of agriculture education.

Conclusion

After completing of the project, the authors concluded that there is more interest than initially believed to incorporate agriculture into the classroom. Parents and teachers have many reasons to teach students about where their food comes from and why it is important to understand. Students, teachers and parents that participated during this project were very enthusiastic about the opportunities that agriculture has in the classroom. With the proper tools and materials schools can utilize agriculture education effectively to engage all learning styles and students.

Recommendations

It is recommended that this video be used to showcase the rationale for incorporating agriculture into the classroom. The video can serve as a promotional tool for Ag in the

Classroom as well as teachers or administrators who want to gain support of faculty and parents to begin integrating agriculture into the curriculum. It is recommended that schools like Old Mission explore the numerous resources online to easily utilize agriculture lesson plans that address the core curriculum standards. It is also encouraged that teachers collaborate with local 4-H clubs, FFA programs, and farm bureau organizations to learn more about resources in the community. The authors of this project strongly encourage that students have the opportunity to learn about the importance of agriculture in their lives today and how it will shape their futures.

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Appendix A - Cal Poly Video and Audio Image Release Form



Visual/Audio Image Release Form

I grant permission to California Polytechnic State University (CPSU), its employees and agents, to take and use visual/audio images of me and/or my art work. Visual/audio images are any type of recording, including photographs, digital images, drawings, renderings, voices, sounds, video recordings, audio clips or accompanying written descriptions. CPSU will not materially alter the visual/audio images. I agree that CPSU owns the visual/audio images of the art work and all rights related to the visual/audio images, but not the art work itself, of which I retain ownership and distribution rights. The visual/audio images may be used in any manner or media without notifying me, such as university-sponsored web sites, publications, promotions, broadcasts, advertisements, posters and theater slides. I waive any right to inspect or approve the finished visual/audio images or any printed or electronic matter that may be used with them.

I release CPSU and its employees and agents, including any firm authorized to publish and/or distribute a finished product containing the visual/audio images, from any claims, damages or liability which I may ever have in connection with the taking of use of the images or printed material used with the visual/audio images.

I am at least 18 years of age and competent to sign this release. I have read this release before signing, I understand its contents, and I freely accept the terms.

Printed Name

Date

Signature

Telephone or email address

Parent or Guardian if under 18 years of age Address (optional)

Project name:
Photographer name/signature/contact information/notes.

**Names of students who turned in
completed release forms**

Adya, Tiffany
Ballantyne, Tina
Barbosa, Nikki
Berg, Abigail
Berryman, Lucas
Butterfield, Nathan
Cannell, Corina
Childs, Sophia
Church, Andrew
Clayton, Isabelle
Couch, Johnny
Garcia, Pablo
Gardner, Faith
Graham, Jackie
Groshart, Brayden
Hadley, Lexi
Hertel, Chase
Higuera, Stefani
Hiltbrand, Spencer
Hilton, Bryce
Kaney, Emily
Klo, Whitney
Kovesdi, Nathan
Locke, Sammie
Mainini, Jennifer
Manning, Jack
Reed, Anna
Ruzius, Emma
Schroeter, Gabriella
Svitek, Jacob
Van Til, Ethan

Appendix B - Top 10 Agriculture Commodity Poster



Appendix C - Top Ten Commodity Worksheet

Draw one of the commodities that you learned about today.



California is the nation's top agriculture state

1. Name one fact about this agriculture commodity: _____

2. What do you find interesting about it? _____

3. What is the commodity ranked for 2010? _____

Appendix D – Parent Survey Responses

1. How have your students been exposed to agriculture?

We have a home garden and we grow and harvest several foods throughout the year.

Our kids have previous experience with school gardens (Children's House Montessori and San Gabriel Elementary in Atascadero) and they enjoyed their school garden experiences immensely. Our neighbors have a vineyard. We go to farmer's markets.

Our family is blessed to have many farming and ranching friends. We spend as much time as possible in agricultural settings, gathering eggs, cultivating row crops and participating in yearly round-ups and brandings.

Minimal exposure at school, but we have made several visits to Cal Poly ranging from the animal areas to picking tangerines and buying produce from your farm stand.

My parents (Ty's grandparents) have a cattle ranch in Morro Bay. She has been attending brandings and other cattle work all of her life.

2. Would you like to see agriculture education taught in the classroom to give more practical hands-on experiences?

Yes please!

Absolutely! It's critical that our children understand where their food comes from and that they value agricultural products and the people who bring them to our markets.

Yes, I believe it would be beneficial for the children to be able to appreciate where their food comes from and what all factors in when bringing it from farm to table.

Of course, there are many resources out there for integrating agriculture into the core curriculum in most grades. Private schools are ideal for such integration as they are less beholden to "THE TEST"

3. Why is it important for students to understand where his or her food comes from?

Because the more educated children are about food (where it comes from and what processed foods really are) the more likely they will make healthy food choices throughout their lives. We enjoyed watching Jamie Oliver's Food Revolution series. Eye opening!!!!

This understanding is important for students' physical well being, since it allows them to make sound nutritional choices centered on whole and organic foods. It is important for their moral development, since they learn to appreciate the bounty that God has provided (which leads to less waste). Finally it is important for the students to understand the economic and social benefits of eating locally grown and harvested agricultural products.

So they can make educated choices about what food they eat and develop a sense of loyalty to local farmers, etc as we live in such a bountiful area...many concepts such as trade, supply and demand, marketing and health could be included in the discussion. Kids need to be “trained” to think outside their immediate sphere of influence, and this provides a meaningful opportunity to do so.

The future of agriculture is becoming more and more dependent on politics and the will of the masses. If those folks don’t have some idea of the unique challenges facing all aspects of their food supply they will find themselves importing the majority of their food. This poses many hazards in terms of food safety. Additionally, my family makes a living in agriculture; Ty’s heritage depends on the understanding of others.

